AMENDMENTS TO THE CLAIMS:

Claims 19, 21-23, 25, 27, 35, 37, 41, 43, and 49 have been amended. Claims 20, 24, 26, 28-34, 36, 38-40, 42, 44-47, 48, and 50-52 have been canceled without prejudice or disclaimer of the subject matter contained therein. Claims 1-18 were previously canceled. Claims 53-56 have been added. This listing of claims will replace all prior versions and listings of claims in the application.

1.-18. (Canceled).

19. (Currently Amended) ~~Device for carrying out chemical or biological reactions~~ A system for optimizing parameters for PCR, the system comprising:

a reaction vessel receiving element, wherein the reaction vessel receiving element is configured to receive one multi-well non-conductive microtiter plate and wherein the reaction vessel receiving element is divided into two or more segments that are thermally insulated from one another; and

two or more ~~heating~~ devices for heating and cooling the reaction vessel receiving element, wherein each device corresponds to one segment; [[and]]

~~a cooling device for cooling the reaction vessel receiving element,~~

~~wherein a) the reaction vessel receiving element is divided into several segments, wherein each segment receives a portion of the microtiter plate, b) each segment is assigned one of the heating devices,~~ wherein the ~~heating~~ devices ~~may be~~ are actuated independently of one another~~, and c) the individual segments are thermally~~

~~decoupled in such a way that different temperature levels may be~~ to set and ~~maintained~~ maintain different temperatures in two adjacent segments;

wherein the system provides different temperatures to the segments during a temperature cycle to optimize the parameters for PCR.

20. (Canceled).

21. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein ~~the segments~~ each segment of the reaction vessel receiving element ~~are each comprised of~~ comprises a base plate with one or more tubular, thin-walled reaction vessel holders, which form one piece together with the base plate.

22. (Currently Amended) ~~Device according to~~ The system of claim [[20]] 19, wherein the segments of the reaction vessel receiving element are each comprised of a base plate with one or more tubular, thin-walled reaction vessel holders, which form one piece together with the base plate.

23. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein the ~~individual~~ segments are ~~thermally decoupled by means of~~ insulated from each other with an air gap formed between adjacent segments.

24. (Canceled).

25. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein the ~~individual~~ segments are ~~thermally decoupled by means of~~ insulated from each other with a thermal insulator inserted in a gap~~, formed~~ between adjacent segments~~, in which a thermal insulator is inserted~~.

26. (Canceled).

27. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein ~~each of~~ the ~~heating~~ devices ~~has a~~ are Peltier ~~element~~ elements, wherein ~~in each case one segment of the reaction vessel receiving element is assigned a Peltier element, and~~ the Peltier elements are thermally coupled to ~~the respective segments~~ each segment.

28. (Canceled).

29. (Canceled).

30. (Canceled).

31. (Canceled).

32. (Canceled).

33. (Canceled).

34. (Canceled).

35. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein the reaction vessel receiving element is divided into at least four segments.

36. (Canceled).

37. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein the individual segments each have the same number of recesses.

38. (Canceled).

39. (Canceled).

40. (Canceled).

41. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein each segment is assigned a temperature sensor, with which the temperature of the segment concerned is sensed, with the temperature of the segment being controlled on the basis of the temperatures sensed by the individual sensors.

42. (Canceled).

43. (Currently Amended) ~~Device according to~~ The system of claim 19, wherein each segment is assigned one or more temperature equalisation elements.

44. (Canceled).

45. (Canceled).

46. (Canceled).

47. (Canceled).

48. (Canceled).

49. (Currently Amended) ~~Device according to~~ The system of claim [[45]] 19, wherein in one operating mode the segments are so actuated that the temperature difference between adjacent segments is less than a predetermined temperature difference (ΔT).

50. (Canceled).

51. (Canceled).

52. (Canceled).

53. (New) The system of claim 19, wherein the parameter optimized is at least one of denaturing temperature, annealing temperature, and elongation temperature.

54. (New) The system of claim 19, wherein the parameter optimized is residence time of at least one of denaturing temperature, annealing temperature, and elongation temperature.

55. (New) The system of claim 19, wherein the parameter optimized is rate of temperature change.

56. (New) The system of claim 19, further comprising a control unit for actuating the two or more devices, wherein each of the two or more devices is individually actuated.